

1 **AMENDMENTS TO THE CLAIMS**

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3 Claims 1-6, 8-13, 15-20, and 22-29 were originally pending.

4 Please amend claims 2-6, 9-13, and 16-19.

5 Please cancel claims 1, 8, 15, 20, and 22-29 without prejudice.

6 Accordingly, claims 2-6, 9-13, and 16-19 remain pending.

7 The following listing of claims replaces all prior versions, and
8 listings of claims in the application.

9

10 1. (Canceled).

11

12 2. (Currently amended) A The method as recited in of claim 61,
13 wherein the dynamic variable amount of time is based on a maximum
14 amount of time that a thread can yield before needing to be scheduled for
15 execution.

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17 3. (Currently amended) A The method as recited in of claim 61,
18 wherein the device is a battery powered device.

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20 4. (Currently amended) A The method as recited in of claim 61,
21 wherein the operating system is a Microsoft WINDOWS CE, Linux,
22 WindRiver, QNX, or PALM operating system.

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24 5. (Currently amended) A The method as recited in of claim 61,
25 wherein the predetermined periodic rate is a millisecond.

1
2 6. (Currently amended) A method as recited in claim 1: A
3 computer-implemented method for providing thread scheduling in a device,
4 the device comprising one or more hardware elements operatively coupled
5 to an operating system comprising a plurality of program modules, the
6 method comprising:

7 scheduling one or more threads according to a predetermined
8 periodic rate;

9 wherein the providing further comprises setting a system timer to
10 generate a notification at the predetermined periodic rate;

11 determining whether or not there are any threads to execute;

12 responsive to a determination that there are no threads to execute:

13 (a) deactivating one or more of the hardware elements and the
14 program modules for a dynamic variable amount of time, the dynamic
15 variable amount of time being independent of the predetermined periodic
16 rate and being based on a sleep state of a set of threads in a sleep queue;
17 and

18 (b) wherein the deactivating further comprises resetting the
19 system timer to generate the notification after the dynamic variable amount
20 of time has elapsed since the deactivating; and

21 wherein the method further comprises:

22 receiving the notification after the dynamic variable amount
23 of time has elapsed since the deactivating; and

24 responsive to the receiving:

1 resetting the system timer to generate the notification
2 at the predetermined periodic rate; and

3 activating the one or more of the hardware ~~modules~~
4 ~~elements~~ and the program modules.

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6 7-8. (Canceled).

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8 9. (Currently amended) A The method as recited in of claim
9 138, wherein the device comprises a battery powered device.

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11 10. (Currently amended) A The method as recited in of claim
12 138, wherein the operating system comprises a Microsoft WINDOWS CE
13 operating system.

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15 11. (Currently amended) A The method as recited in of claim
16 138, wherein the predetermined periodic rate is a millisecond.

17
18 12. (Currently amended) A method as recited in claim 8: A
19 method for providing thread scheduling in a device, the device comprising
20 one or more hardware elements operatively coupled to an operating system
21 comprising a plurality of program modules, the method comprising:

22 scheduling one or more threads at a predetermined periodic rate,
23 wherein the scheduling further comprises comprising setting a system timer
24 to the predetermined periodic rate, the predetermined periodic rate
25 corresponding to a thread scheduling accuracy; and

1 determining whether or not there are any threads to execute;
2 responsive to a determination that there are no threads to execute:
3 (a) deactivating one or more of the hardware elements and the
4 program modules for a dynamic variable amount of time, the dynamic
5 variable amount of time being based on a sleep state of a set of threads in a
6 sleep queue and independent of the predetermined periodic rate; and
7 (b) wherein the deactivating further comprises resetting the
8 system timer to generate a notification after the dynamic variable amount of
9 time has elapsed since the deactivating; and
10 activating the one or more of the hardware elements and the program
11 modules only when the operating system:
12 (c) needs to schedule a thread for execution upon expiration
13 of the dynamic variable amount of time since the deactivating, or
14 (d) upon receipt of an external event that is not a system timer
15 event.

16

17 13. (Currently amended) A method as recited in claim 8: A
18 method for providing thread scheduling in a device, the device comprising
19 one or more hardware elements operatively coupled to an operating system
20 comprising a plurality of program modules, the method comprising:
21 scheduling one or more threads at a predetermined periodic rate;
22 determining whether or not there are any threads to execute;
23 responsive to a determination that there are no threads to execute:
24 (a) deactivating one or more of the hardware elements and the
25 program modules for a dynamic variable amount of time, the dynamic

1 variable amount of time being based on a sleep state of a set of threads in a
2 sleep queue and independent of the predetermined periodic rate; and

3 (b) wherein the deactivating further comprises resetting a
4 system timer to generate a notification after the dynamic variable amount of
5 time has elapsed, the dynamic variable amount of time being a maximum
6 amount of time that a thread can yield to other threads before needing to be
7 scheduled for execution; and

8 activating the one or more of the hardware elements and the program
9 modules only when the operating system needs to perform an action
10 selected from a group of actions comprising scheduling a thread for
11 execution upon expiration of the dynamic variable amount of time since the
12 deactivating, or upon receipt of an external event that is not a system timer
13 event, -wherein the activating further comprises comprising resetting the
14 system timer to the predetermined periodic rate to provide substantial
15 thread scheduling accuracy.

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17 14-15. (Canceled).

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19 16. (Currently amended) A The computer-readable storage
20 medium as recited in of claim 1915, wherein the dynamic variable amount
21 of time comprises a maximum amount of time that a thread has specified
22 that it will yield to other threads before it needs to be scheduled for
23 execution.

1 17. (Currently amended) A The computer-readable storage
2 medium as recited in of claim 1915, wherein the device comprises a battery
3 powered device.

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5 18. (Currently amended) A The computer-readable storage
6 medium as recited in of claim 1945, wherein the operating system
7 comprises a Microsoft WINDOWS CE operating system.

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9 19. (Currently amended) A computer readable storage medium as
10 recited in claim 15, wherein the computer executable instructions further
11 comprise instructions for: A computer-readable storage medium containing
12 computer-executable instructions for scheduling threads in a device, the
13 device including an operating system comprised of a plurality of program
14 modules that are in turn coupled to one or more hardware elements, the
15 computer-executable instructions comprising instructions for:

16 determining at a periodic rate whether or not there are any threads to
17 execute; and

18 responsive to a determination that there are no threads to execute:

19 (a) deactivating one or more of the program modules and the
20 hardware elements for a dynamic variable amount of time, the dynamic
21 variable amount of time being independent of the periodic rate, the dynamic
22 variable amount of time being based on a sleep state of a set of threads in a
23 sleep queue; and

24 (b) in the deactivating, configuring a system timer to send a
25 first timer interrupt after the dynamic variable amount of time has elapsed,

1 the dynamic variable amount of time being a maximum amount of time that
2 a first thread can yield to a second thread before the first thread needs to be
3 executed;

4 responsive to receiving the first timer interrupt:

5 (ac) configuring the system timer to send a second timer
6 interrupt at the periodic rate; and

7 (bd) activating the one or more of the program modules and
8 the hardware elements to determine if there are any threads to execute.

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10 20-29. (Canceled).